REMARKS

In the January 11, 2007, Office Action, the Examiner rejected claims 9-15 under 35 U.S.C. 112, second paragraph, as being indefinite; rejected claims 1, 4, 9, 12, 15, and 16 under 35 U.S.C. 102(e) as being anticipated by U.S. Patent No. 7,073,054 to Kim et al ("Kim"); rejected claims 2, 10, and 17 under 35 U.S.C. 103(a) as being unpatentable over Kim in view of U.S. Patent No. 5,860,083 to Sukegawa ("Sukegawa"); rejected claims 2, 3, 7, 10, 11, 14, 17, 18, and 20 under 35 U.S.C. 103(a) as being unpatentable over Kim in view of U.S. Patent Publication No. 2004/0162950 to Coulson ("Coulson"); and rejected claims 5, 6, 13, and 19 under 35 U.S.C. 103(a) as being unpatentable over Kim. In addition, the Examiner objected to claim 8, but stated that claim 8 would be allowable if rewritten to overcome the base claim limitations. Applicant respectfully traverses the rejections for the reasons set forth hereinbelow.

A. General Remarks Concerning This Response

As a preliminary matter, Applicant notes with appreciation the indication that claim 8 would be allowable, and hereby reserves the right to amend the claim as suggested by the Examiner. In this response, Applicant has amended the pending claims to specify that the hard disk drive device contains *both* a storage media (such as a drive platter) and a non-volatile cache memory for storing a copy of the program module that is loaded into startup memory during startup operations. In this respect, the independent claims have each been amended to incorporate the non-volatile cache memory requirement of the dependent claims, and to the extent appropriate, the dependent claims (specifically, claims 2 and 17) have been cancelled without prejudice. Accordingly, Applicant has not changed the scope of the invention with these amendments, but has merely incorporated dependent claim requirements into the independent claims. As explained more fully below, Applicant submits that none of the cited references, taken singly or in combination, disclose or suggest the claimed scheme wherein the hard disk drive storage device itself contains both the storage media and a non-volatile cache memory on which is stored a copy of the program module loaded during startup.

B. Claims 9-15 Are Definite In Particularly Pointing Out And Distinctly Claiming The Invention

In response to the Examiner's rejection of claims 9-15 under 35 U.S.C. § 112 as being indefinite, Applicant has amended claim 9 to make clear the relationship between the recited "program module" and "first storage device" requirements. While Applicant submits that the original language of claim 9 would have been understood by those skilled in the art to

particularly point out and distinctly claim the inventive subject matter, Applicant has nonetheless amended claim 9 to clarify this aspect in an effort to expedite the prosecution of the claims. Accordingly, Applicant respectfully requests that the indefiniteness rejection of claims 9-15 under 35 U.S.C. § 112 be withdrawn and that the claims be allowed.

C. Claims 1, 4, 9, 12, 15, and 16 Are Not Anticipated By Kim

In response to the Examiner's rejection of claims 1, 4, 9, 12, 15, and 16 as being anticipated by Kim, Applicant respectfully requests reconsideration and withdrawal of the rejection because each of the claims recites that the hard disk drive storage device includes a non-volatile cache memory. In respect of the "cache memory" requirement, the Examiner has acknowledged that "Kim et al does not mention that the non-volatile memory comprises a cache memory." *See*, Office Action, p. 6. Accordingly, Applicant respectfully requests that the anticipation rejection of claims 1, 4, 9, 12, 15, and 16 under 35 U.S.C. § 102 be withdrawn and that the claims be allowed.

D. Claim 10 Is Not Obvious over Kim In View Of Sukegawa

In response to the Examiner's rejection of claim 10 as being obvious over Kim in view of Sukegawa,[1] Applicant respectfully requests reconsideration and withdrawal of the rejection because the cited combination does not make obvious the present invention's method for requesting a program module from a hard disk drive storage device that includes *both* a first storage media and a non-volatile cache memory, as recited in claim 10. To the contrary, Sukegawa's Figure 1 and the associated description explicitly and repeatedly discloses that Sukegawa's hard disk drive (HDD) is separate from the asserted cache memory 10C in the flash memory unit 1. Thus, putting aside for the moment the propriety of combining the Kim and Sukegawa references, the combination fails to disclose or suggest Applicant's claimed invention of requesting a program module from a first hard disk drive storage device that has both a first storage media and a non-volatile cache memory. Accordingly, Applicant respectfully requests that the obviousness rejection of claim 10 under 35 U.S.C. § 103 be withdrawn and that the claims be allowed.

[1] The Examiner also rejected claims 2 and 17 as obvious over Kim and Coulson, but these claims have been cancelled without prejudice.

E. Claims 3, 7, 10, 11, 14, 18, and 20 Are Not Obvious over Kim In View Of Coulson

In response to the Examiner's rejection of claims 3, 7, 10, 11, 14, 18, and 20 as being obvious over Kim in view of Coulson,[2] Applicant respectfully requests reconsideration and withdrawal of the rejection because the Examiner has not established a *prima facie* case of obviousness. To establish *prima facie* obviousness of a claimed invention, all the claim limitations must be taught or suggested by the prior art. In re Royka, 490 F.2d 981, 180 USPQ 580 (CCPA 1974); In re Wilson, 424 F.2d 1382, 1385, 165 USPQ 494, 496 (CCPA 1970). Where a rejection is based on the assertion that all claim limitations are found in a number of prior art references, the fact finder must determine "[w]hat the prior art teaches, whether it teaches away from the claimed invention, and whether it motivates a combination of teachings from different references." In re Fulton, 391 F.3d 1195, 1199-1200 (Fed. Cir. 2004). The motivation-to-combine inquiry "prevent[s] statutorily proscribed hindsight reasoning when determining the obviousness of an invention." Alza Corp. v. Mylan Labs., Inc., No. 06-1019 (Fed. Cir. Sept. 6, 2006). Thus, in the absence of any *explicit* suggestion in the cited references that they should be combined, the Examiner must show that an *implicit* suggestion to combine these references may be found in the "common knowledge, the prior art as a whole, or the nature of the problem itself." Dystar Textilfarben GMBH v. C.H. Patrick Co., No. 06-1088, pp. 7-8 (Fed. Cir. 2006). When a motivation to combine is not explicitly taught by the prior art references, the "evidence" of motive may be provided as an explanation of the well-known principle or problem-solving strategy to be applied, but in any event *requires* some evidence of any common knowledge and common sense, above and beyond mere assumption. Id., pp. 17-20.

As a preliminary matter, a *prima facie* case of obviousness has not been established because, as noted above and admitted by the Examiner, the Kim reference does not disclose or suggest the present invention's scheme for storing a copy of a startup program module in a hard disk drive storage device that includes *both* a first storage media and a non-volatile cache memory (as variously recited in claims 3, 7, 10, 11, 14, 18, and 20). In other words, Kim does not disclose a non-volatile cache memory in the hard disk drive storage device. The Examiner concedes that the non-volatile cache memory requirements recited in claims 1, 3, 7, 9, 10, 11, 14, 16, 18, and 20 are missing from Kim, but asserts that the disclosure of Coulson meets the missing requirements. *See*, Office Action, p. 6. However, Applicant respectfully submits that

[2] The Examiner also rejected claims 2 and 17 as obvious over Kim and Sukegawa, but these claims have been cancelled without prejudice.

this deficiency is not remedied by Coulson, which discloses that the cache memory is *separate from* the hard disk drive storage device. In particular, Coulson's Figure 1 and the associated description explicitly and repeatedly discloses that the mass storage device 160 (HDD) is *separate from* the asserted non-volatile cache memory 145 in the chipset 140 or bus card 240. Indeed, rather than disclosing a non-volatile memory in the disk drive storage device, Coulson teaches that "Known disk drives include a volatile cache (e.g., a DRAM cache, an SRAM cache), but such volatile caches are typically part of the disk drive's microcontoller's main memory address space and thereby byte addressed (and not block addressed)." Coulson, paragraph 5 (emphasis added). As a result, the proposed combination appears to conflict with Coulson's disclosure of a non-volatile cache that is not included in the mass storage medium. Indeed, Coulson actually *teaches away* from Applicant's claimed invention in disclosing that known disk drives contain volatile cache memories. When, as here, the Coulson reference teaches away from the claimed invention, a *prima facie* case of obviousness has been rebutted. *See*, MPEP § 2144.05(III) ("A *prima facie* case of obviousness may also be rebutted by showing that the art, in any material respect, teaches away from the claimed invention. In re Geisler, 116 F.3d 1465, 1471, 43 USPQ2d 1362, 1366 (Fed. Cir. 1997)....").

In the absence of any proper evidence that persons skilled in the art would be motivated to combine the references, this appears to be a textbook example of hindsight reconstruction. Obviousness can not be established by hindsight combination to produce the claimed invention. In re Gorman, 933 F.2d 982, 986, 18 USPQ2d 1885, 1888 (Fed. Cir. 1991). In short, the Examiner has not made a *prima facie* case that the combination of Kim and Coulson were suggested by the prior art, common knowledge, or the nature of the problem, viewed through the eyes of an ordinary artisan, but has instead engaged in improper hindsight reconstruction by using the Applicant's invention to selectively pick and choose from the cited art. Accordingly, Applicant respectfully requests that the obviousness rejection of claims 3, 7, 10, 11, 14, 18, and 20 be withdrawn and that the claims be allowed.

F. Claims 5, 6, 13, and 19 Are Not Obvious over Kim

In response to the Examiner's rejection of claims 5, 6, 13, and 19 as being obvious over Kim, Applicant respectfully requests reconsideration and withdrawal of the rejection because Kim neither discloses nor suggests that the hard disk drive storage device includes *both* a first storage media and a non-volatile cache memory, as discussed hereinabove. Indeed, the Examiner has acknowledged that "Kim et al does not mention that the non-volatile memory comprises a cache memory." *See*, Office Action, p. 6. To the extent that the additional

requirements of dependent claims 5, 6, 13, and 19 are admitted to be missing from the Kim disclosure, and are only remedied by reliance on "Official Notice," Applicant submits that the Examiner has engaged in improper hindsight reconstruction by using the Applicant's invention to selectively pick and choose from the cited art. In particular, where a rejection is based on the assertion that all claim limitations are found in a number of prior art references, the fact finder must determine "[w]hat the prior art teaches, whether it teaches away from the claimed invention, and whether it motivates a combination of teachings from different references." In re Fulton, 391 F.3d 1195, 1199-1200 (Fed. Cir. 2004). The motivation-to-combine inquiry "prevent[s] statutorily proscribed hindsight reasoning when determining the obviousness of an invention." Alza Corp. v. Mylan Labs., Inc., No. 06-1019 (Fed. Cir. Sept. 6, 2006). Thus, in the absence of any *explicit* suggestion in the cited references that they should be combined, the Examiner must show that an *implicit* suggestion to combine these references may be found in the "common knowledge, the prior art as a whole, or the nature of the problem itself." Dystar Textilfarben GMBH v. C.H. Patrick Co., No. 06-1088, pp. 7-8 (Fed. Cir. 2006). The Examiner has not offered the required evidence. Instead, the Examiner asserts without support that "One of ordinary skill would be motivated to have the IPL with MBR, boot loader and kernel as that would provide the necessary functionality for the system" and that "One of ordinary skill would be motivated to have RAID array for its redundancy." *See*, Office Action, p. 7. When a motivation to combine is not explicitly taught by the prior art references, the "evidence" of motive may be provided as an explanation of the well-known principle or problem-solving strategy to be applied, but in any event *requires* some evidence of any common knowledge and common sense, above and beyond mere assumption. Id., pp. 17-20.

For at least the foregoing reasons, Applicant respectfully requests that the obviousness rejection of claims 5, 6, 13, and 19 under 35 U.S.C. § 103 be withdrawn and that the claims be allowed.

CONCLUSION

In view of the amendments and remarks set forth herein, Applicant respectfully submits that all pending claims are in condition for allowance and request that a Notice of Allowance be issued. Nonetheless, should any issues remain that might be subject to resolution through a telephonic interview, the Examiner is requested to telephone the undersigned at 512-338-9100.

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Respectfully submitted,

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